

200A - POWER DELIVERY TRACES OF
BUS SYSTEM

200B - COMMAND DELIVERY TRACES
OF BUS SYSTEM

200C - ADDRESS DELIVERY TRACES
OF BUS SYSTEM

200D - DATA DELIVERY TRACES OF
BUS SYSTEM

200E - TIMING TRACES OF BUS
SYSTEM

200F - COMBINED COMMAND,
ADDRESS, AND DATA TRACES

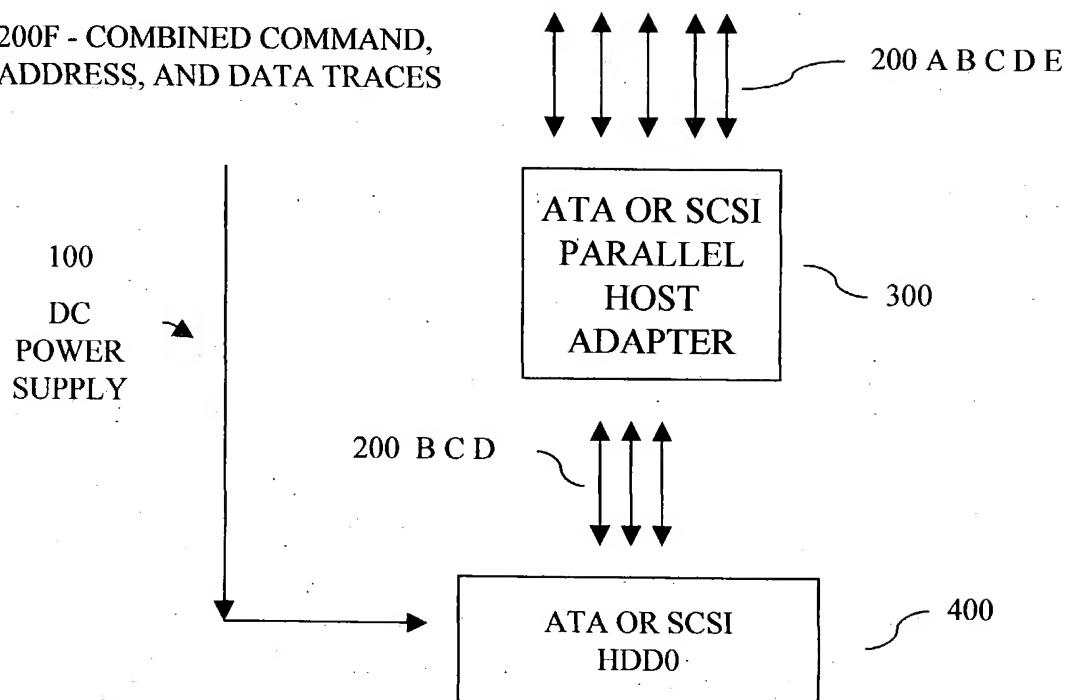


FIGURE 1: TYPICAL RELATIONSHIP OF PARALLEL HARD DISK DRIVE, ATA OR SCSI, TO HOST ADAPTER, SYSTEM BUS, AND POWER TRACES FROM SYSTEM POWER SUPPLY.

200A - POWER DELIVERY TRACES OF
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OF BUS SYSTEM

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OF BUS SYSTEM

200D - DATA DELIVERY TRACES OF
BUS SYSTEM

200E - TIMING TRACES OF BUS
SYSTEM

200F - COMBINED COMMAND,
ADDRESS, AND DATA TRACES

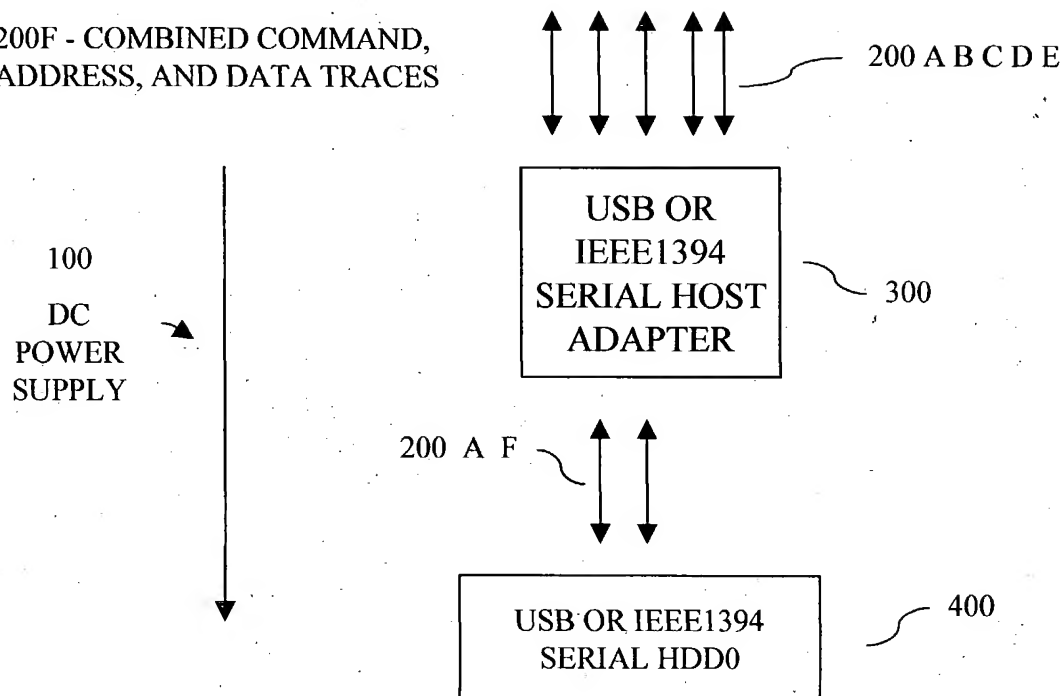


FIGURE 2: TYPICAL RELATIONSHIP OF USB OR IEEE 1394 SERIAL HARD DISK
DRIVE TO HOST ADAPTER, SYSTEM BUS, AND POWER TRACES
FROM SYSTEM POWER SUPPLY.

200A - POWER DELIVERY TRACES OF
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OF BUS SYSTEM

200C - ADDRESS DELIVERY TRACES
OF BUS SYSTEM

200D - DATA DELIVERY TRACES OF
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200E - TIMING TRACES OF BUS
SYSTEM

200F - COMBINED COMMAND,
ADDRESS, AND DATA TRACES

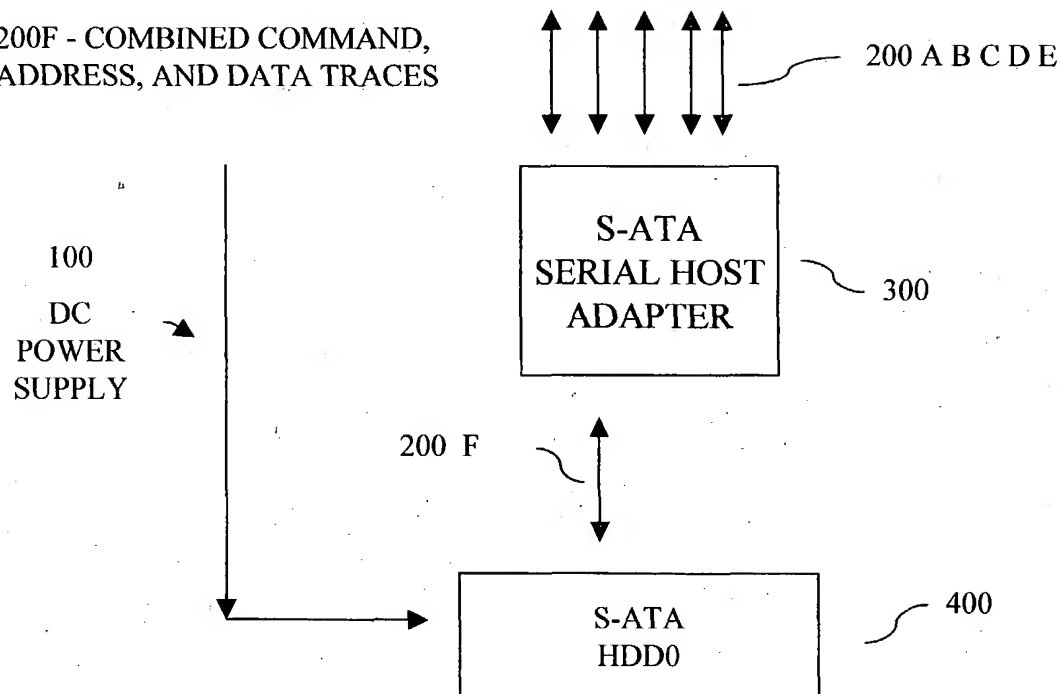


FIGURE 3: TYPICAL RELATIONSHIP OF S-ATA SERIAL HARD DISK DRIVE TO
HOST ADAPTER, SYSTEM BUS, AND POWER TRACES FROM SYSTEM
POWER SUPPLY.

200A - POWER DELIVERY TRACES OF
BUS SYSTEM

200B - COMMAND DELIVERY TRACES
OF BUS SYSTEM

200C - ADDRESS DELIVERY TRACES
OF BUS SYSTEM

200D - DATA DELIVERY TRACES OF
BUS SYSTEM

200E - TIMING TRACES OF BUS
SYSTEM

200F - COMBINED COMMAND,
ADDRESS, AND DATA TRACES

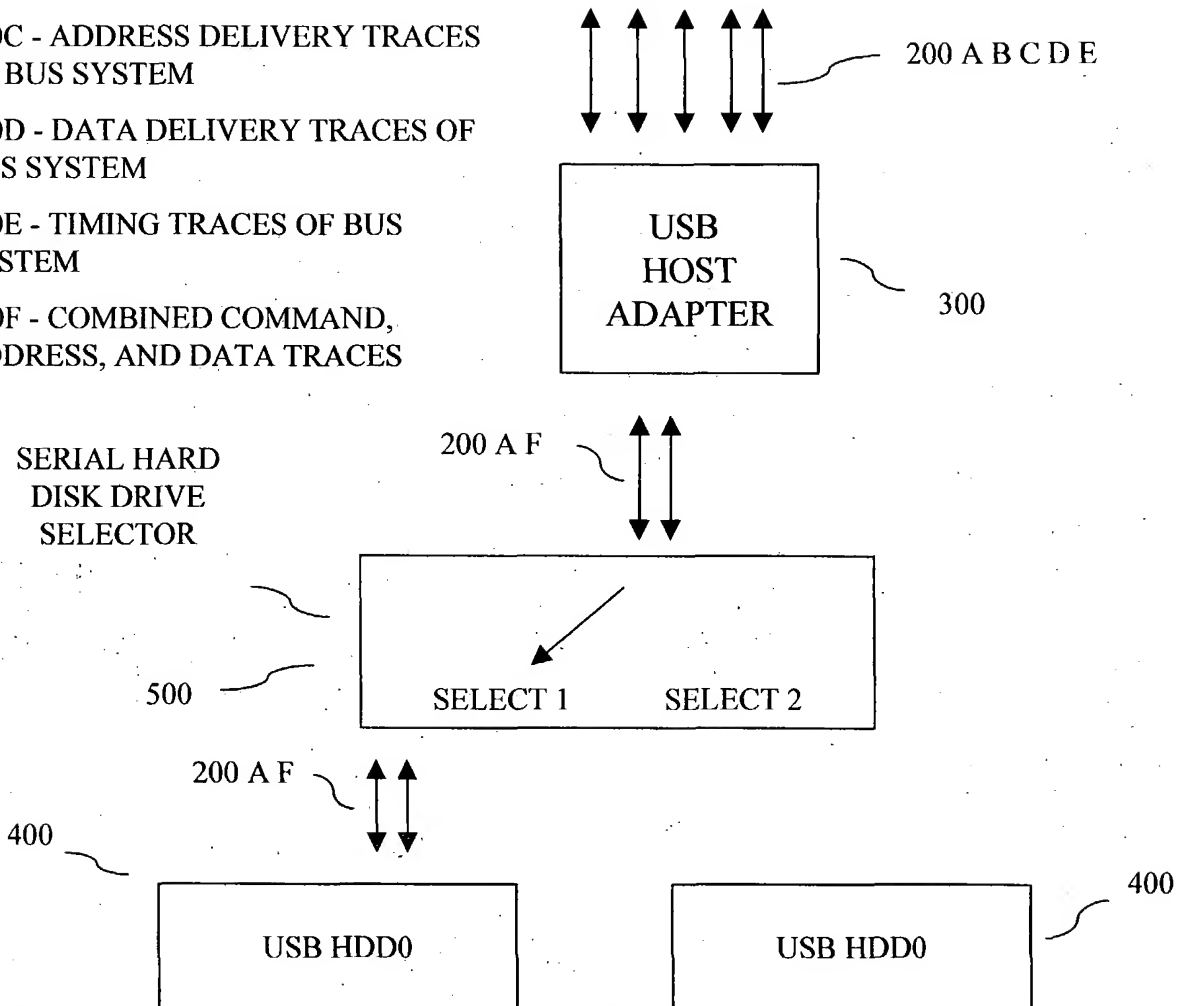


FIGURE 4: THIS INVENTION USED IN THE ENVIROMENT OF USB
SERIAL HARD DISK DRIVES; SELECTION 1 MADE.

200A - POWER DELIVERY TRACES OF
BUS SYSTEM

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OF BUS SYSTEM

200C - ADDRESS DELIVERY TRACES
OF BUS SYSTEM

200D - DATA DELIVERY TRACES OF
BUS SYSTEM

200E - TIMING TRACES OF BUS
SYSTEM

200F - COMBINED COMMAND,
ADDRESS, AND DATA TRACES

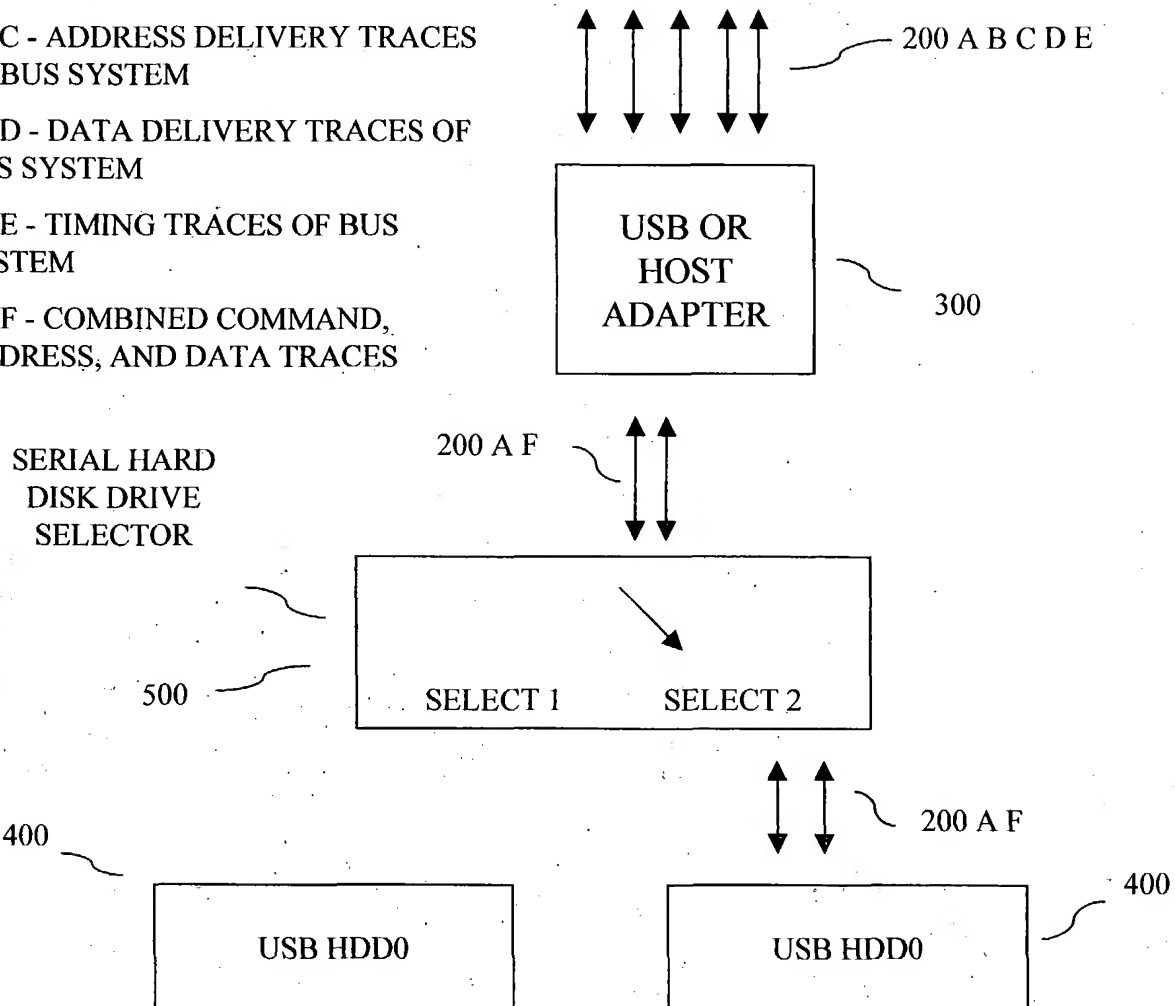


FIGURE 5: THIS INVENTION USED IN THE ENVIROMENT OF USB
SERIAL HARD DISK DRIVES; SELECTION 2 MADE.

200A - POWER DELIVERY TRACES OF
BUS SYSTEM

200B - COMMAND DELIVERY TRACES
OF BUS SYSTEM

200C - ADDRESS DELIVERY TRACES
OF BUS SYSTEM

200D - DATA DELIVERY TRACES OF
BUS SYSTEM

200E - TIMING TRACES OF BUS
SYSTEM

200F - COMBINED COMMAND,
ADDRESS, AND DATA TRACES

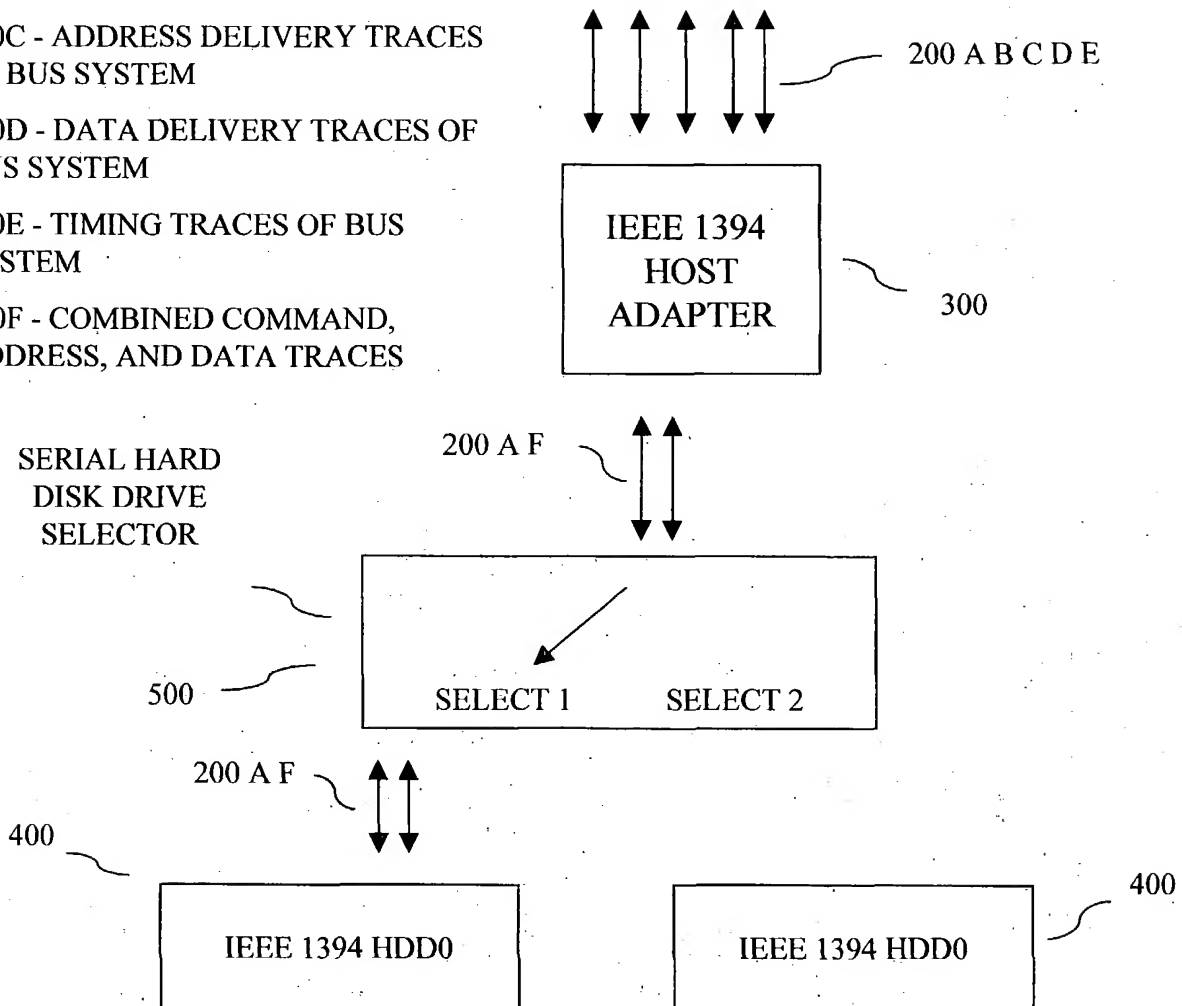


FIGURE 6: THIS INVENTION USED IN THE ENVIROMENT OF IEEE 1394
SERIAL HARD DISK DRIVES; SELECTION 1 MADE.

200A - POWER DELIVERY TRACES OF
BUS SYSTEM

200B - COMMAND DELIVERY TRACES
OF BUS SYSTEM

200C - ADDRESS DELIVERY TRACES
OF BUS SYSTEM

200D - DATA DELIVERY TRACES OF
BUS SYSTEM

200E - TIMING TRACES OF BUS
SYSTEM

200F - COMBINED COMMAND,
ADDRESS, AND DATA TRACES

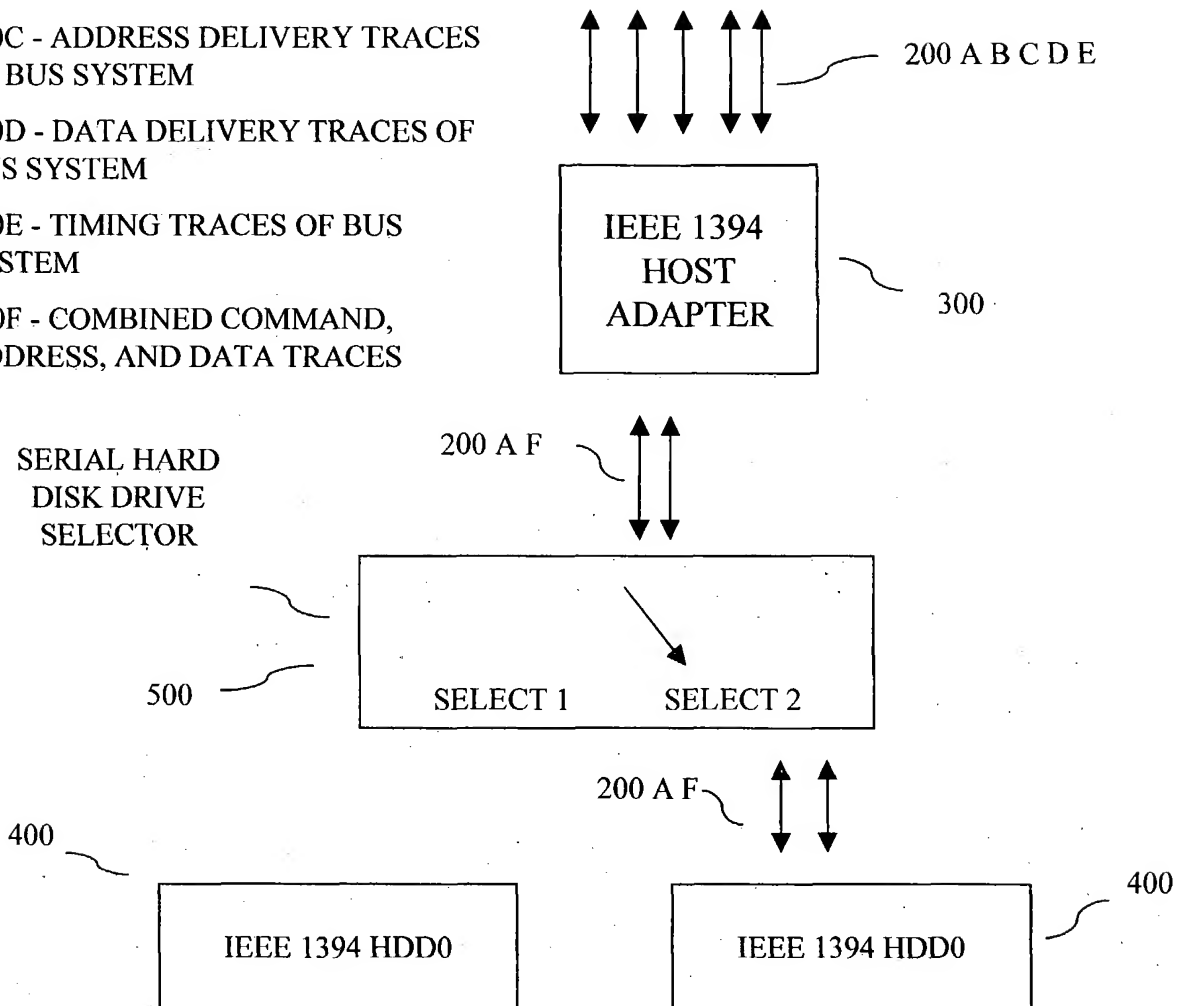


FIGURE 7: THIS INVENTION USED IN THE ENVIROMENT OF IEEE 1394
SERIAL HARD DISK DRIVE; SELECTION 2 MADE.

200A - POWER DELIVERY TRACES OF
BUS SYSTEM

200B - COMMAND DELIVERY TRACES
OF BUS SYSTEM

200C - ADDRESS DELIVERY TRACES
OF BUS SYSTEM

200D - DATA DELIVERY TRACES OF
BUS SYSTEM

200E - TIMING TRACES OF BUS
SYSTEM

200F - COMBINED COMMAND,
ADDRESS, AND DATA TRACES

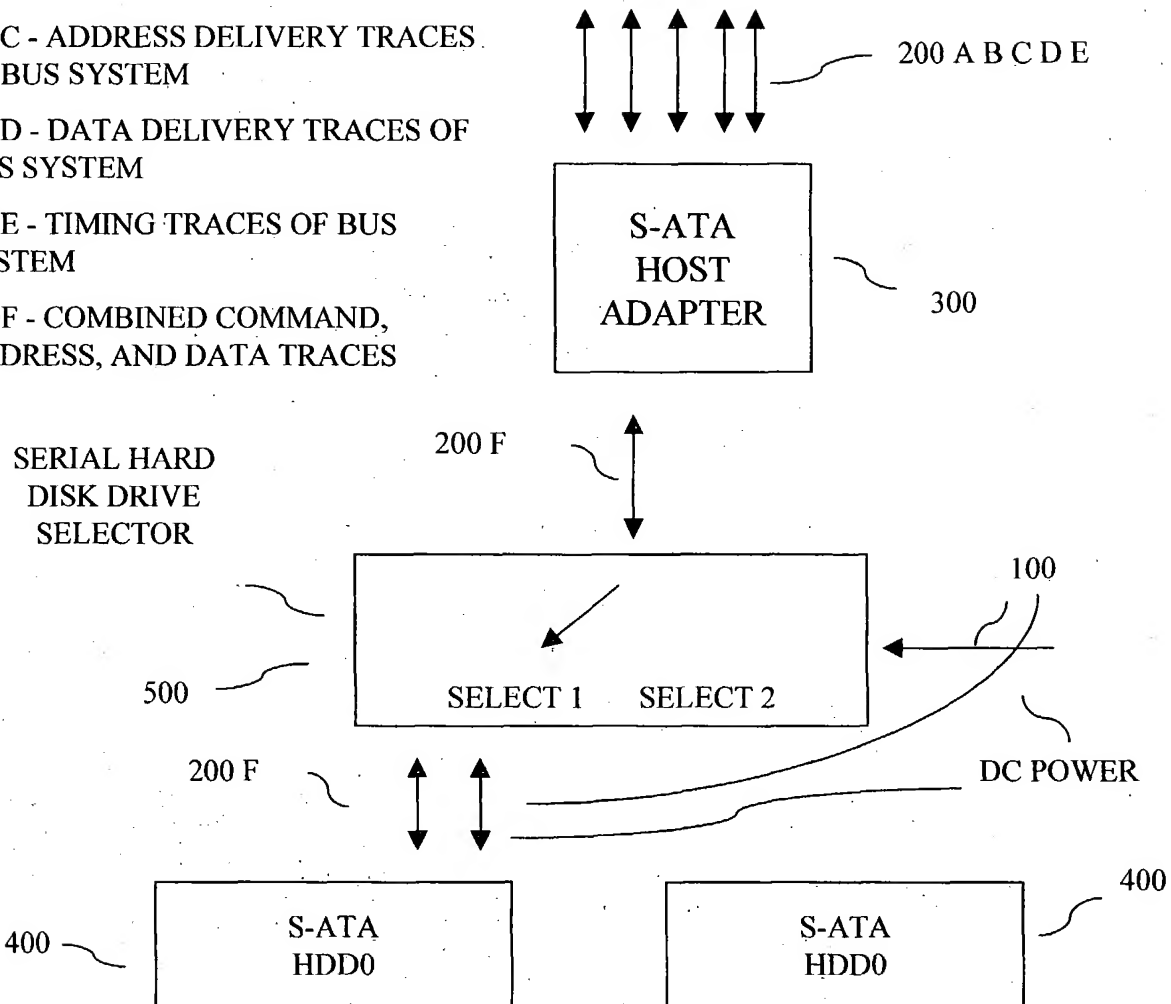


FIGURE 8: THIS INVENTION USED IN THE ENVIROMENT OF S-ATA
SERIAL HARD DISK DRIVES; SELECTION 1 MADE.

200A - POWER DELIVERY TRACES OF
BUS SYSTEM

200B - COMMAND DELIVERY TRACES
OF BUS SYSTEM

200C - ADDRESS DELIVERY TRACES
OF BUS SYSTEM

200D - DATA DELIVERY TRACES OF
BUS SYSTEM

200E - TIMING TRACES OF BUS
SYSTEM

200F - COMBINED COMMAND,
ADDRESS, AND DATA TRACES

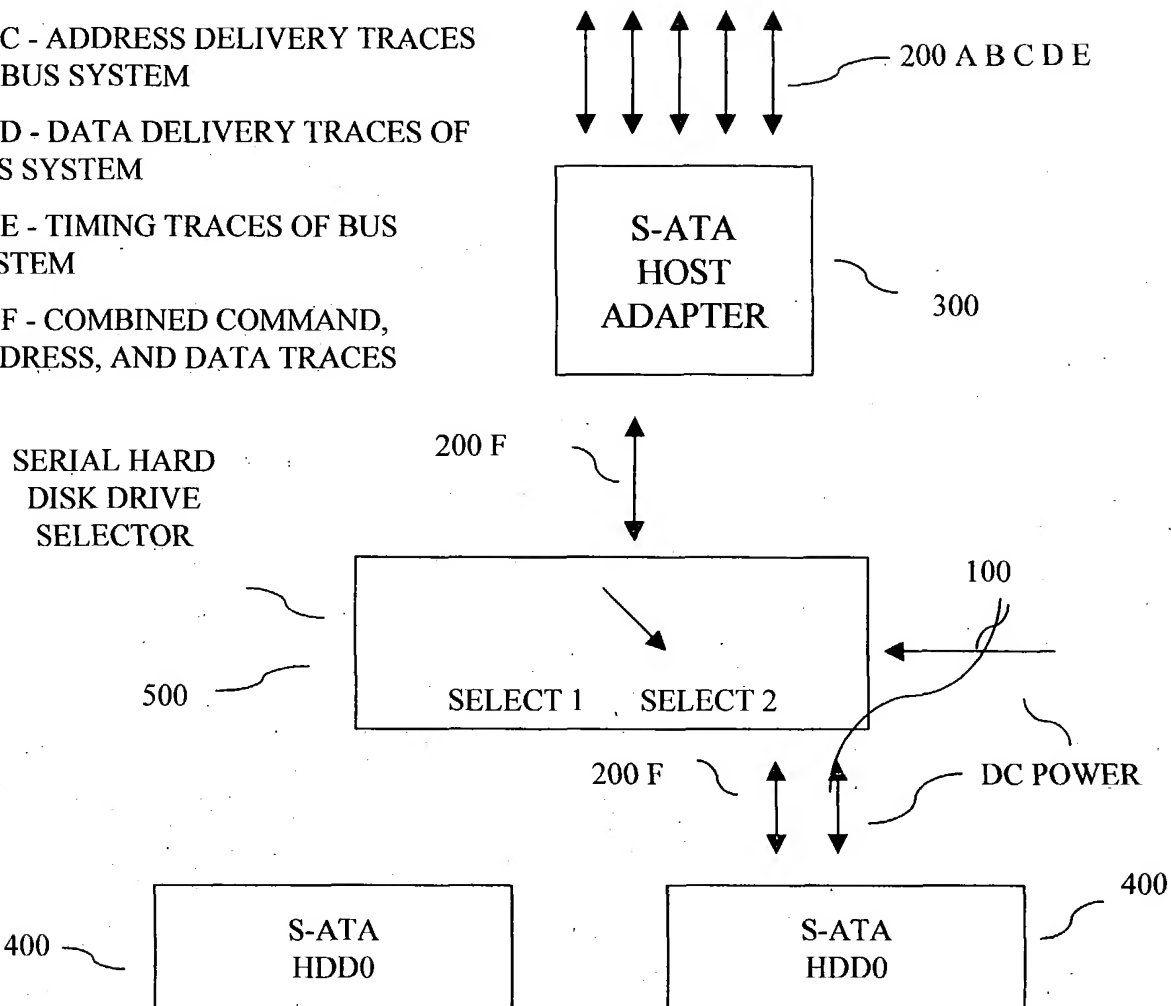


FIGURE 9: THIS INVENTION USED IN THE ENVIROMENT OF S-ATA
SERIAL HARD DISK DRIVES; SELECTION 2 MADE.

200A - POWER DELIVERY
TRACES OF BUS SYSTEM

200B - COMMAND
DELIVERY TRACES OF BUS
SYSTEM

200C - ADDRESS DELIVERY
TRACES OF BUS SYSTEM

200D - DATA DELIVERY
TRACES OF BUS SYSTEM

200E - TIMING TRACES OF
BUS SYSTEM

200F - COMBINED
COMMAND, ADDRESS, AND
DATA TRACES

501 POWER CONTROL DELIVERY
COMPONENT

502 ADDRESS, COMMAND, AND
DATA CONTROL DELIVERY
COMPONENT

503 MASTER CONTROL
COMPONENT

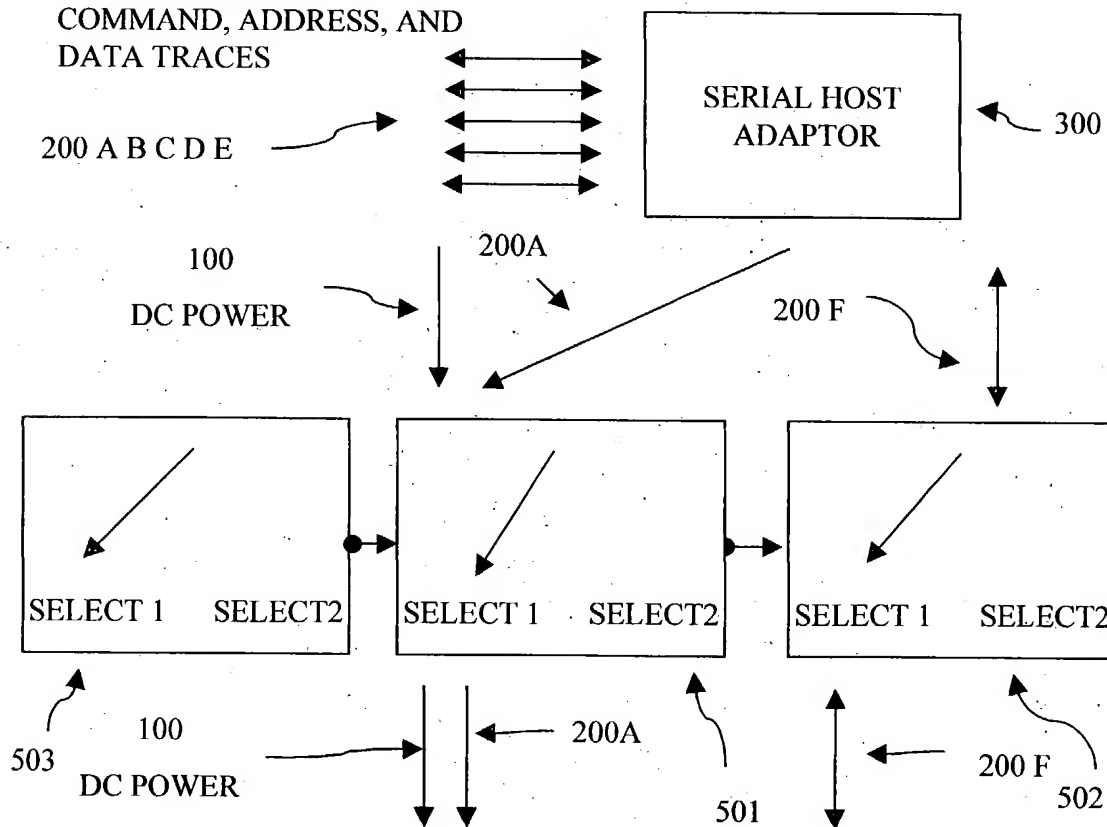


FIGURE 10: THIS INVENTION; SELECTION 1 MADE.

200A - POWER DELIVERY
TRACES OF BUS SYSTEM

200B - COMMAND
DELIVERY TRACES OF BUS
SYSTEM

200C - ADDRESS DELIVERY
TRACES OF BUS SYSTEM

200D - DATA DELIVERY
TRACES OF BUS SYSTEM

200E - TIMING TRACES OF
THE BUS SYSTEM

200F - COMBINED
COMMAND, ADDRESS, AND
DATA TRACES

501 POWER CONTROL DELIVERY
COMPONENT

502 ADDRESS, COMMAND, AND
DATA CONTROL DELIVERY
COMPONENT

503 MASTER CONTROL
COMPONENT

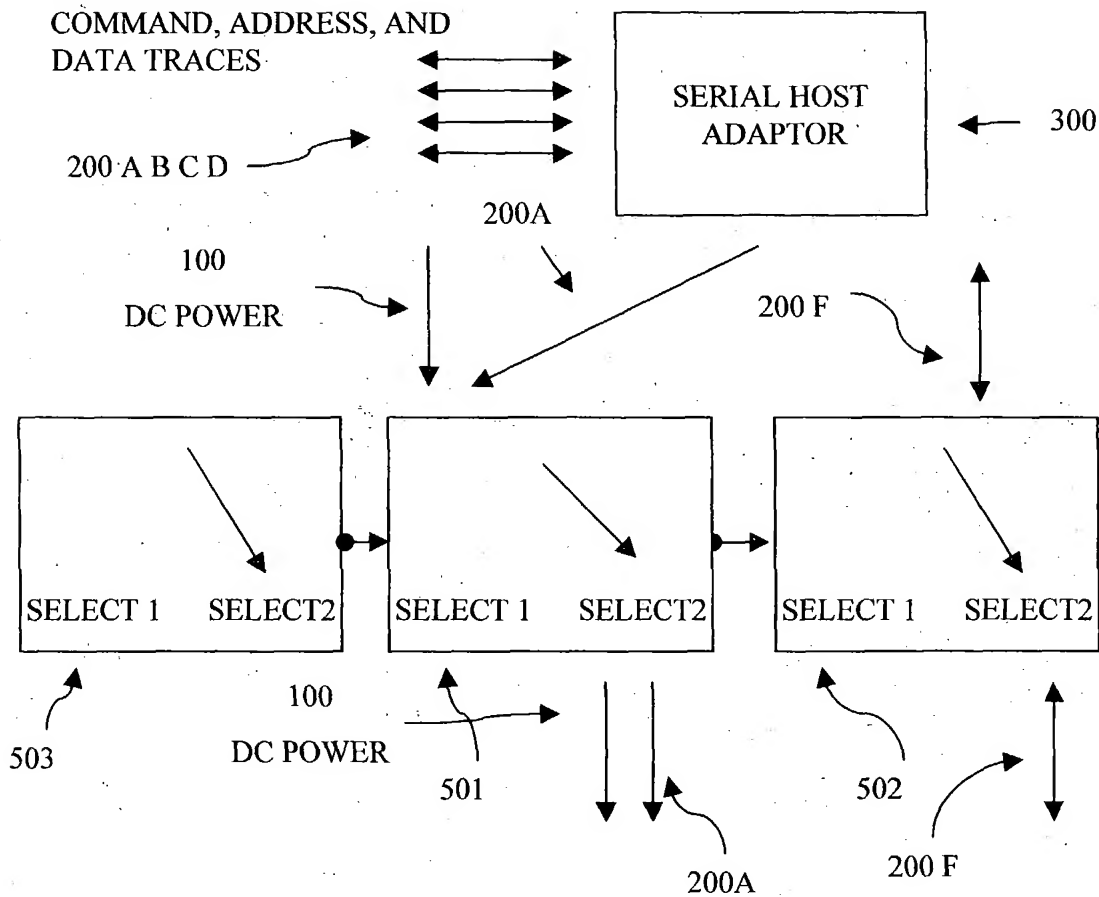


FIGURE 11: THIS INVENTION; SELECTION 2 MADE.

PIN #	PIN TITLE	PIN FUNCTION
1	VCC	POWER DELIVERY FROM BUS SYSTEM
2	-DATA	ADDRESS, COMMAND, AND DATA TRANSFER
3	+DATA	ADDRESS, COMMAND, AND DATA TRANSFER
4	GROUND	GROUND
5	SHELL	GROUND, DRAIN WIRE

FIGURE 12: UNIFORM SERIAL BUS SERIAL HARD DISK DRIVE PINNOUT

PIN #	PIN TITLE	PIN FUNCTION
1	TPA+	ADDRESS, COMMAND, AND DATA TRANSFER
2	TPB+	ADDRESS, COMMAND, AND DATA TRANSFER
3	GROUND	GROUND
4	+ VOLTAGE	POWER DELIVERY FROM SYSTEM BUS
5	TPB-	ADDRESS, COMMAND, AND DATA TRANSFER
6	TPA -	ADDRESS, COMMAND, AND DATA TRANSFER
7	SHELL	GROUND

FIGURE 13: IEEE 1394 SERIAL HARD DISK DRIVE PINNOUT

PIN #	PIN TITLE	PIN FUNCTION
S1	GROUND	GROUND
S2	A+	ADDRESS, COMMAND AND DATA TRANSFER
S3	A-	ADDRESS, COMMAND AND DATA TRANSFER
S4	GROUND	GROUND
S5	B-	ADDRESS, COMMAND AND DATA TRANSFER
S6	B+	ADDRESS, COMMAND AND DATA TRANSFER
S7	GROUND	GROUND
P1	+3.3V	POWER DELIVERY FROM SYSTEM POWER SUPPLY
P2	+3.3V	POWER DELIVERY FROM SYSTEM POWER SUPPLY
P3	+3.3V	POWER DELIVERY FROM SYSTEM POWER SUPPLY
P4	GROUND	GROUND
P5	GROUND	GROUND
P6	GROUND	GROUND
P7	+5.0V	POWER DELIVERY FROM SYSTEM POWER SUPPLY
P8	+5.0V	POWER DELIVERY FROM SYSTEM POWER SUPPLY
P9	+5.0V	POWER DELIVERY FROM SYSTEM POWER SUPPLY
P10	GROUND	GROUND
P11	GROUND	GROUND
P12	GROUND	GROUND
P13	+12.0V	POWER DELIVERY FROM SYSTEM POWER SUPPLY
P14	+12.0V	POWER DELIVERY FROM SYSTEM POWER SUPPLY
P15	+12.0V	POWER DELIVERY FROM SYSTEM POWER SUPPLY

FIGURE 14: SERIAL ATA HARD DISK DRIVE PINNOUT